REMARKS

1. Rejection of claims 1, 9-11 under 35 USC 102(e) per Yang (US 6,709,883):

Examiner has rejected claims 1, 9, 10, and 11 based upon Yang. Examiner specifically notes Yang's col. 4 lines 1-6 in rejecting claim 1, and Yang's col. 3 lines 52-54 in rejecting claim 11.

Yang states "A layer of adhesion promoter can be formed on the surface of the LED epitaxial structure and transparent substrate surface by, for example, deposition, evaporation, or sputtering, to improve the adhesion property between the LED epitaxial structure and the transparent substrate."

However, this is the only mention of an "adhesion promoter" anywhere in Yang's patent. Yang does not teach or suggest what materials may be suitable, nor does Yang teach or suggest what the function or mechanism of the materials are. A few adhesion promoters for BCB are made by Dow Chemical, such as AP3000 (containing vinyltriacetoxysilane (VTAS) dissolved in methoxypropanol, as referenced in USPTO published application 20040002162), but these work poorly and are different from Applicants' invention.

In contrast, Applicants clearly teach both materials and mechanism for the use of Cr, Ti, and SiNx as reaction layers in paragraphs [0018] and [0019] of the present application, where in paragraph [0018] the "third stack 4 is formed by performing a chemical reaction to generate a hydrogen bond or an ionic bond between the second reaction layer 22 of the first stack 2 and the transparent adhesive layer 12, and to generate a hydrogen bond or an ionic bond between the first reaction layer 11 of the second stack 3 and the transparent adhesive layer 12" and in paragraph [0019] "The first reaction layer 11 and the second reaction layer 22 each comprise at least one material selected from the group consisting of SiNx, Ti, Cr, and the like materials."

In response, Applicants have merged the original claim 8 (which is dependent on claim 1) with the original claim 1 to form an amended claim 1 specifying the material

of the reaction layers. No new matter has been introduced.

Claims 9 and 10 are dependent on claim 1, and claim 11 is dependent on claim 10 which is dependent on claim 1. Accordingly, if the amended claim 1 is found to be allowable, these claims should be allowed as well.

Applicants respectfully request reconsideration of Examiner's rejection in light of this amendment.

2. Rejection of claims 1-7, 9-11 under 35 USC 103(a) per Lebby (US 5,358,880) in combination with Yang (US 6,709,883):

Examiner has rejected claims 1-7, and 9-11 based upon Yang in combination with Lebby.

While Lebby teaches the use of epoxy to bond an emitting stack to a substrate to form an LED, Lebby never teaches or suggests that such a thing as an adhesion promoter or reactive layer exists. While Yang refers to adhesion promoters, Yang fails to teach or suggest any materials that would be suitable or mechanism for same. The combination of these two patents thus does not teach the use of any specific materials as adhesion promoters.

Applicants' claim 1, as amended, is clearly patentable over the combination of Lebby and Yang, as it teaches the use of Cr, Ti, and SiNx as a reaction layer to create a stronger LED structure. Claims 2-7 and 9-11 are dependent upon claim 1 and should be allowed if claim 1 is found to be allowable.

Applicants respectfully request reconsideration of Examiner's rejection in light of this amendment.

3. Rejection of claims 8, 12, 13 under 35 USC 103(a) per Yamazaki (US 2001/0019244) in combination with Yang (US 6,709,883) and Lebby (US 5,358,880):

Examiner has rejected claims 8, 12, and 13 based on the combination of Yang, Lebby, and Yamazaki, stating that "Yamazaki et al. teach that metal material including titanium (Ti) and chromium (Cr) is used to enhance the adhesive properties between a

transparent substrate and an ITO transparent conductive layer" (Yamazaki paragraph [0068]).

Yamazaki does not teach an LED. Yamazaki creates an "electroluminescent light-emitting element" on a plastic film substrate, wherein the emitting layer is formed of zinc sulfide. Yamazaki states that the plastic film substrate, and hence the entire element, is meant to be flexible (Yamazaki paragraph [0046]).

Yamazaki's list of substrates in paragraph [0046] includes polyimide (PI), which is only one of the substances that Applicants teach as an adhesive. However, in paragraph [0046] Yamazaki teaches molding the substrate, and then in paragraph [0069] Yamazaki optionally uses sputtering or vacuum deposition to coat the substrate with a thin metal layer, which in paragraph [0068] Yamazaki writes may be "nickel, chromium, gold, silver, zinc, zirconium, titanium, tungsten, tin, palladium, and alloys comprising two or more thereof." Finally, in paragraph [0052], Yamazaki sputters the ITO transparent conductive layer onto the substrate, presumably on top of the optional thin metal layer.

In contrast, Applicants' LED structure comprises a second substrate 10, on which the first reaction layer 11 is formed (Applicants' paragraph [0018]). The second substrate 10 "comprises at least one material selected from a group consisting of SiC, Al2O3, glass materials, quartz, GaP, GaAsP, AlGaAs, and the like materials" in Applicants' paragraph [0019]. Applicants' substrate is entirely different from the flexible transparent polymer that Yamazaki needs to use for his electroluminescent element.

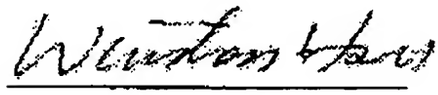
Furthermore, Applicants use "at least one material selected from a group consisting of PI, BCB, PFCB, and the like materials" as a transparent adhesive, not as a molded substrate; in addition to teaching materials other than polyimide (PI) as a transparent adhesive, the purpose of the polyimide as an adhesive is entirely different from Yamazaki's use of a molded piece of clear polymer (including polyimide) as a substrate on which to build a flexible electroluminescent element using zinc sulfide.

Yamazaki never teaches that a thin metal layer will improve adhesion to any of Applicants' second substrates, thus Yamazaki is not applicable to Applicants' LED devices. Finally, neither Yamazaki, Lebby, nor Yang ever teach the use of SiNx as a reaction layer. Thus, Applicants' claims are patentable over the combination of Yamazaki, Lebby, and Yang.

Applicants respectfully request reconsideration of Examiner's rejection in light of this amendment.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,



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